ACOUSTIC CURRENT DOPPLER PROFILERS (ADCP's)

ADCP's
Developing Standards for ADCP's

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Problem:

Currently there is not a Corps Standard for the use of ADCP's for Discharge measurements or for velocity and current direction data. This data is used extensively throughout the Corps of Engineers for creating and developing Stage Discharge Curves to Validating Numerical and Physical Models.

Products:

- **Corps Guidance on using an ADCP for a Discharge Measurement**
- **Corps Recommendations on Software and Firmware Versions for ADCP's**
- **Corps Guidance on Data Review of ADCP data**

Benefits:

- **Establishment of a formal Co-Op between the Corps and the USGS**
- **Establishment of a Contact Spec for Reference**
- **Better overall data quality and integrity**

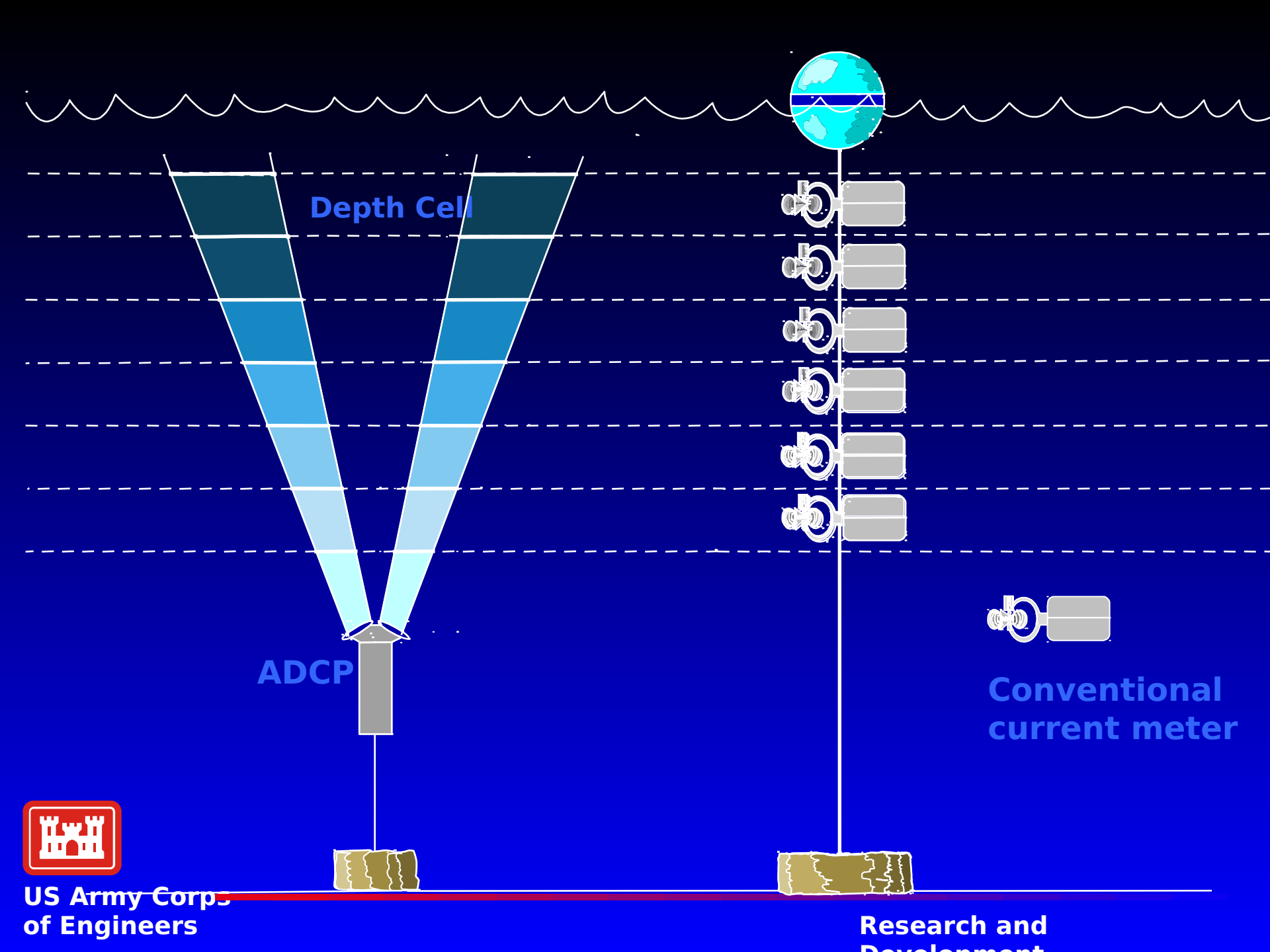
ADCP's
Developing Standards for ADCP's

- TELEDYNE RD INSTRUMENTS
- Rio Grande
  - Broadband
  - 4 Transducers
  - Affordable
  - High Resolution Profiling
  - Exceptionally Small
    - Easy to Handle
    - Mounting Options

600 or 1200 kHz

ADCP's
Developing Standards for ADCP's

- SonTek-YSI
- River Surveyor
  - Narrowband
  - 3 Transducers
  - Affordable
  - Exceptionally Small
    - Easy to Handle
    - Mounting Options



US Army Corps
of Engineers

Research and
Development

ADCP's
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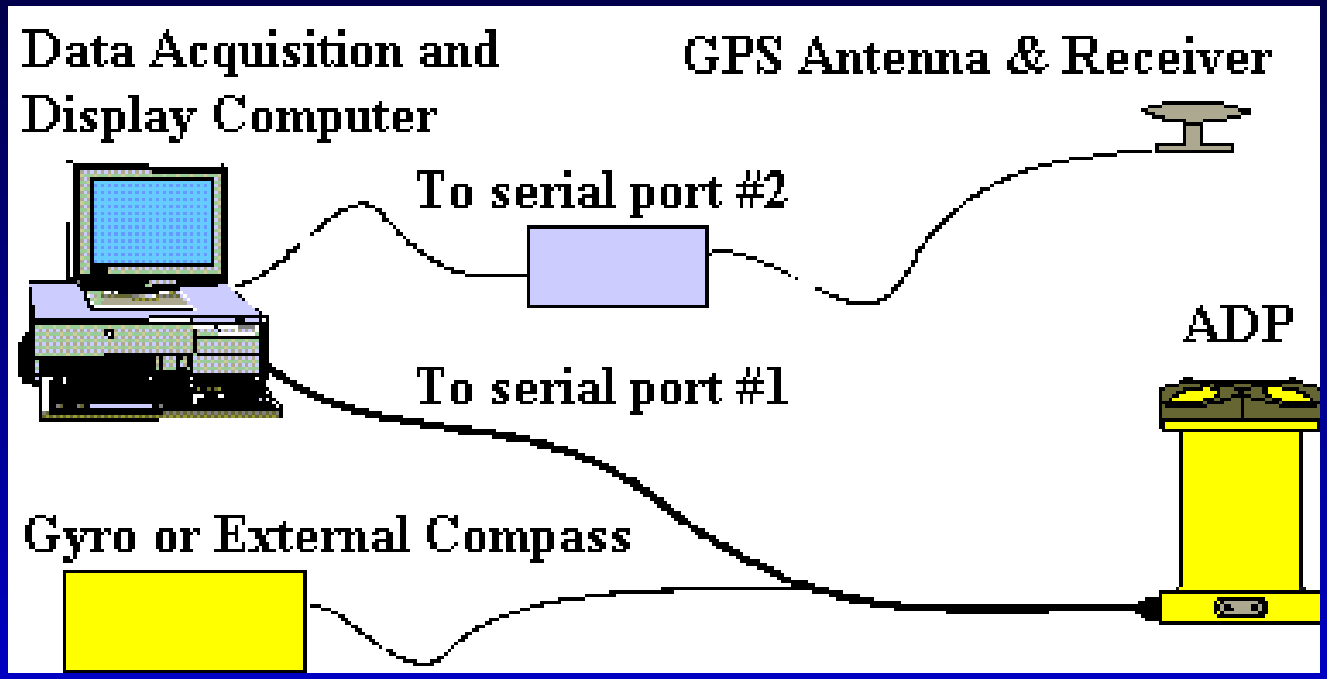
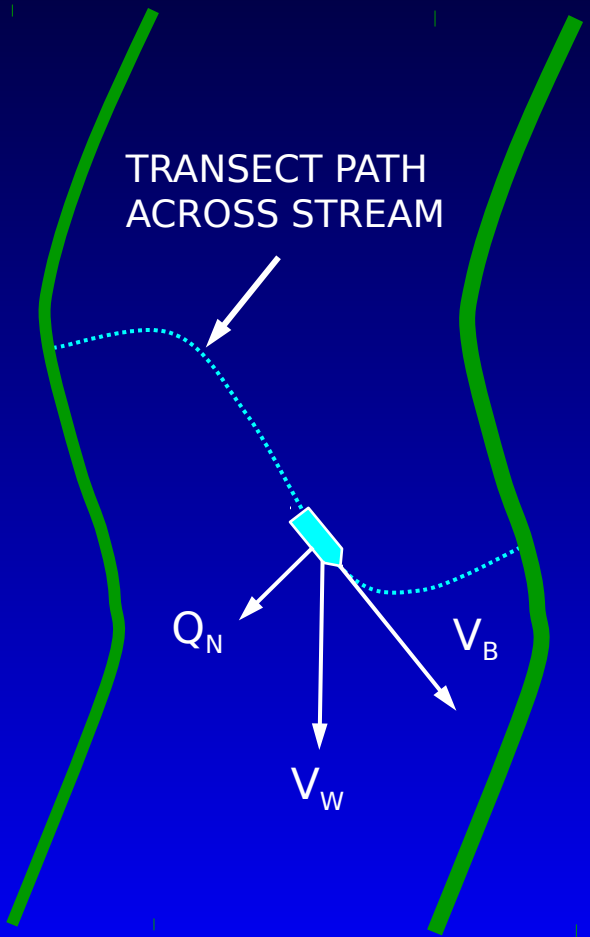
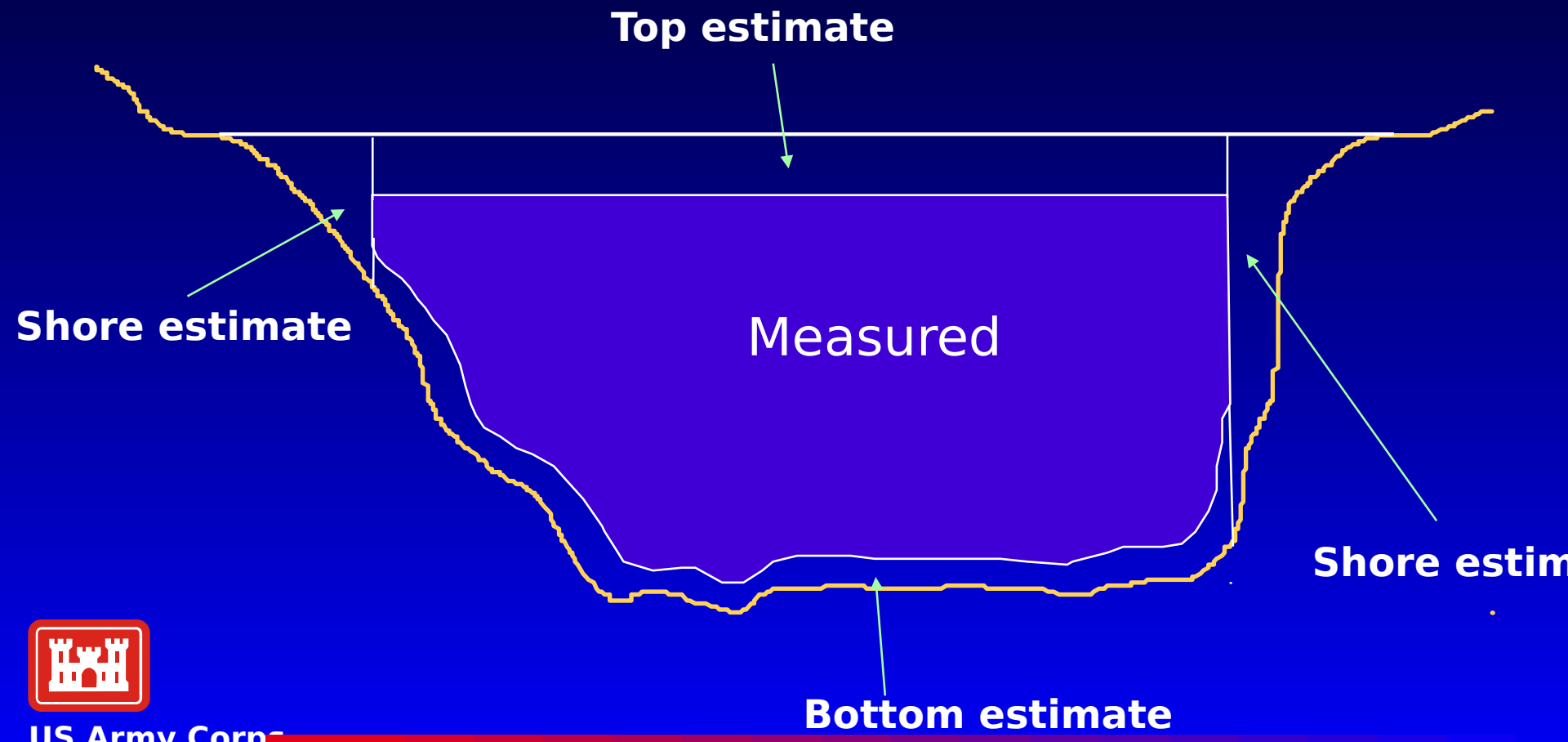


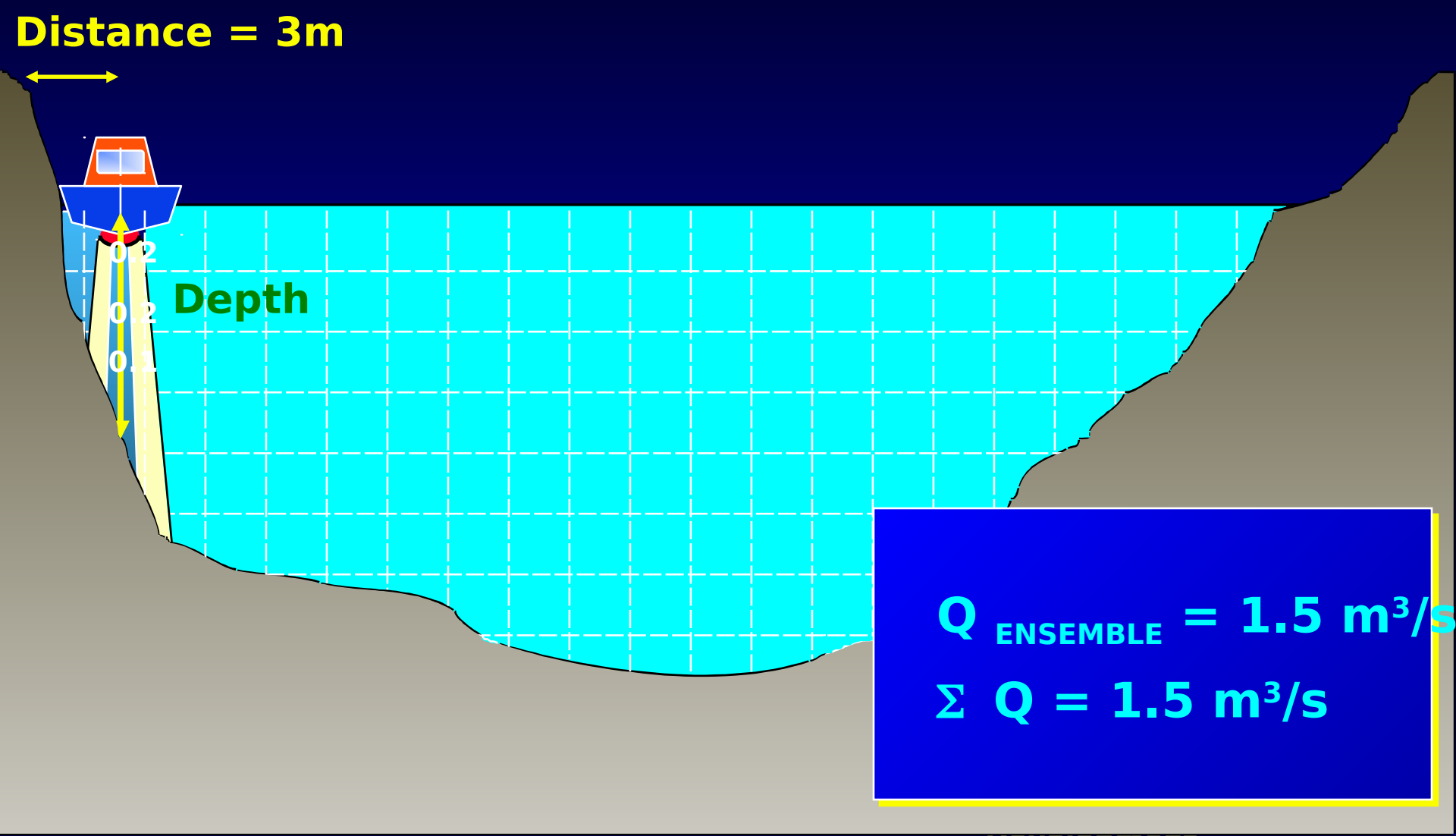
ADCP Discharge Measurement



Measured and Unmeasured Areas



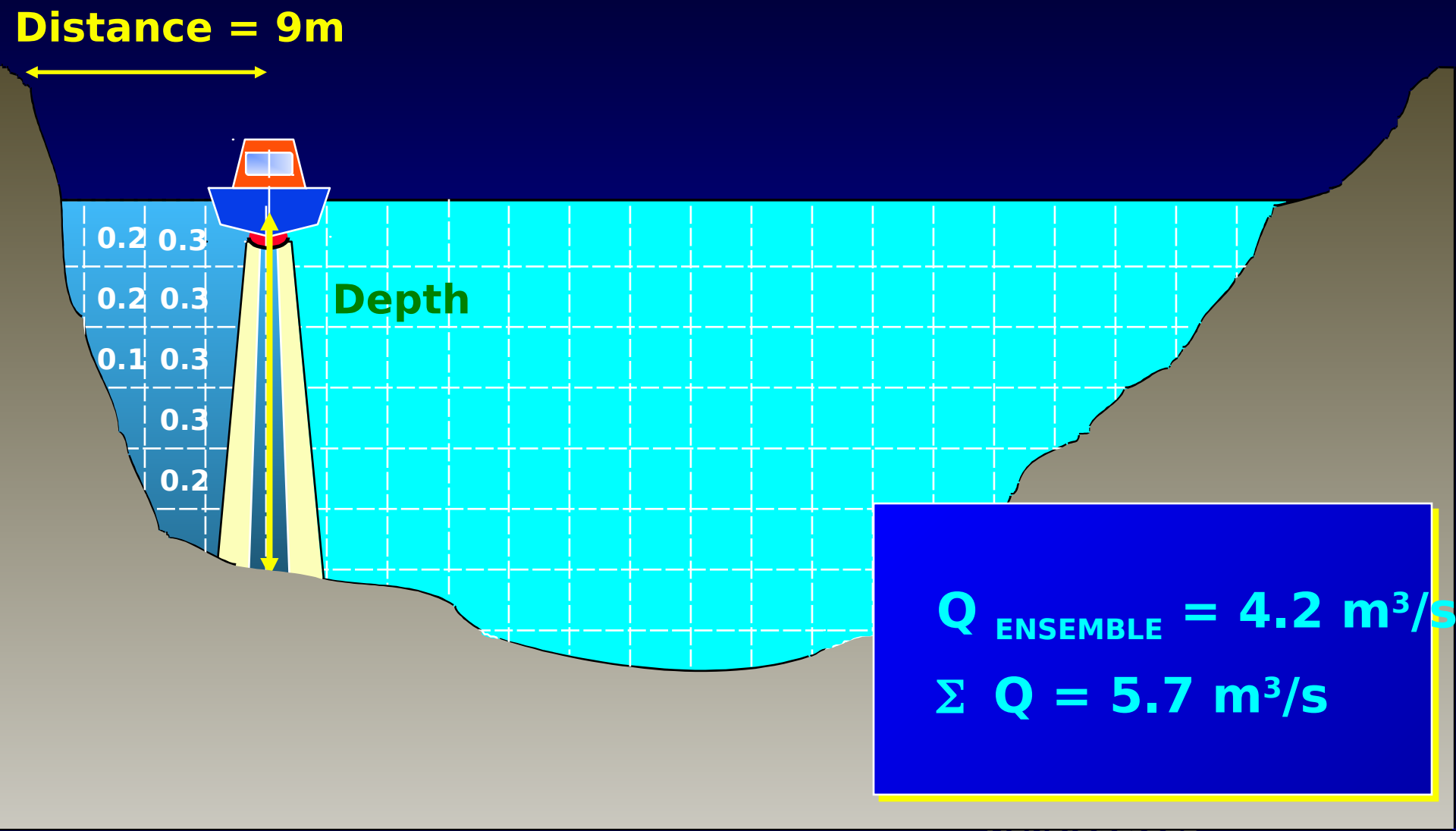
Discharge Measurement



$Q_{ENSEMBLE} = 1.5\ m^3/s$

$\Sigma\ Q = 1.5\ m^3/s$

Discharge Measurement



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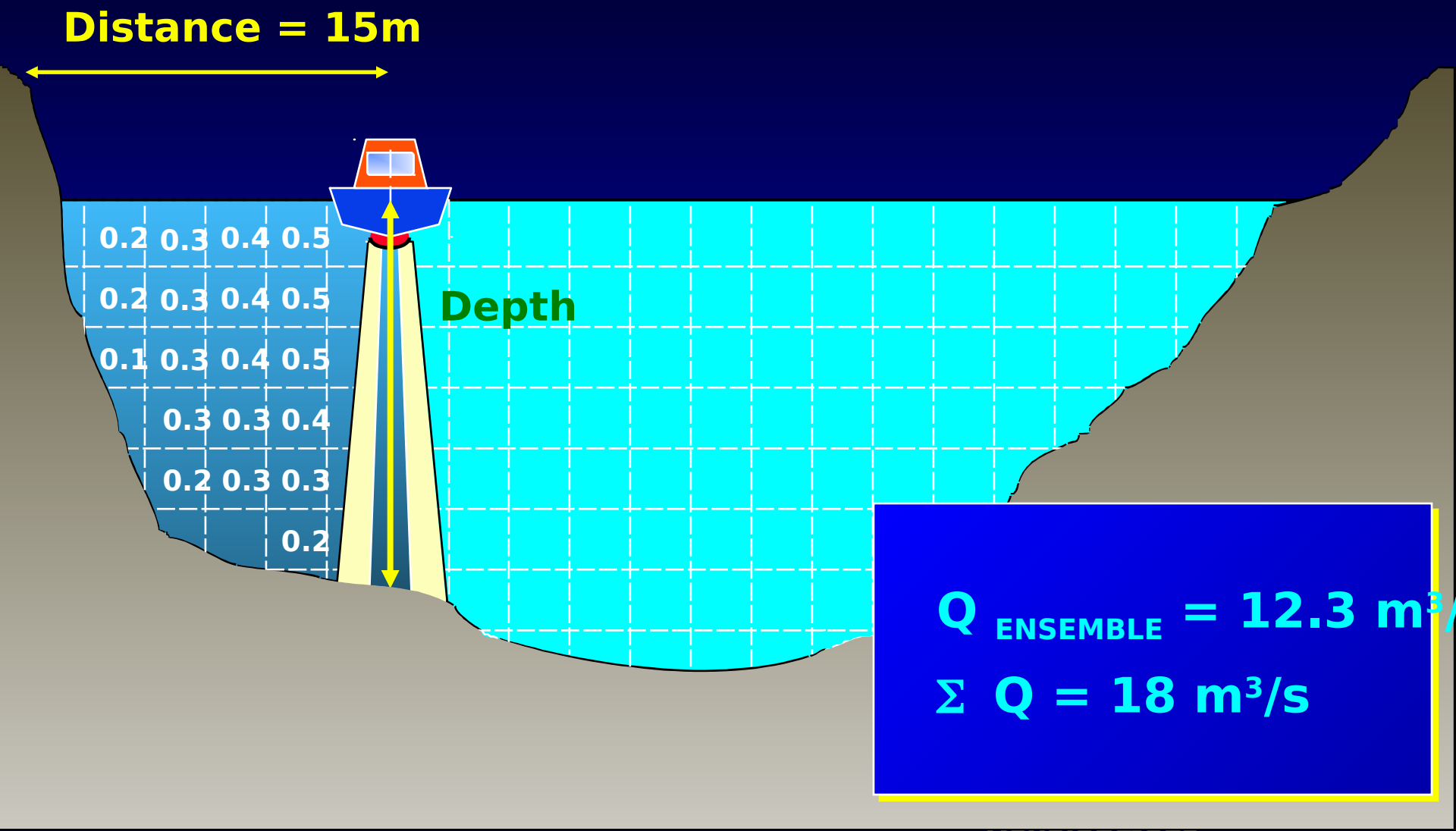

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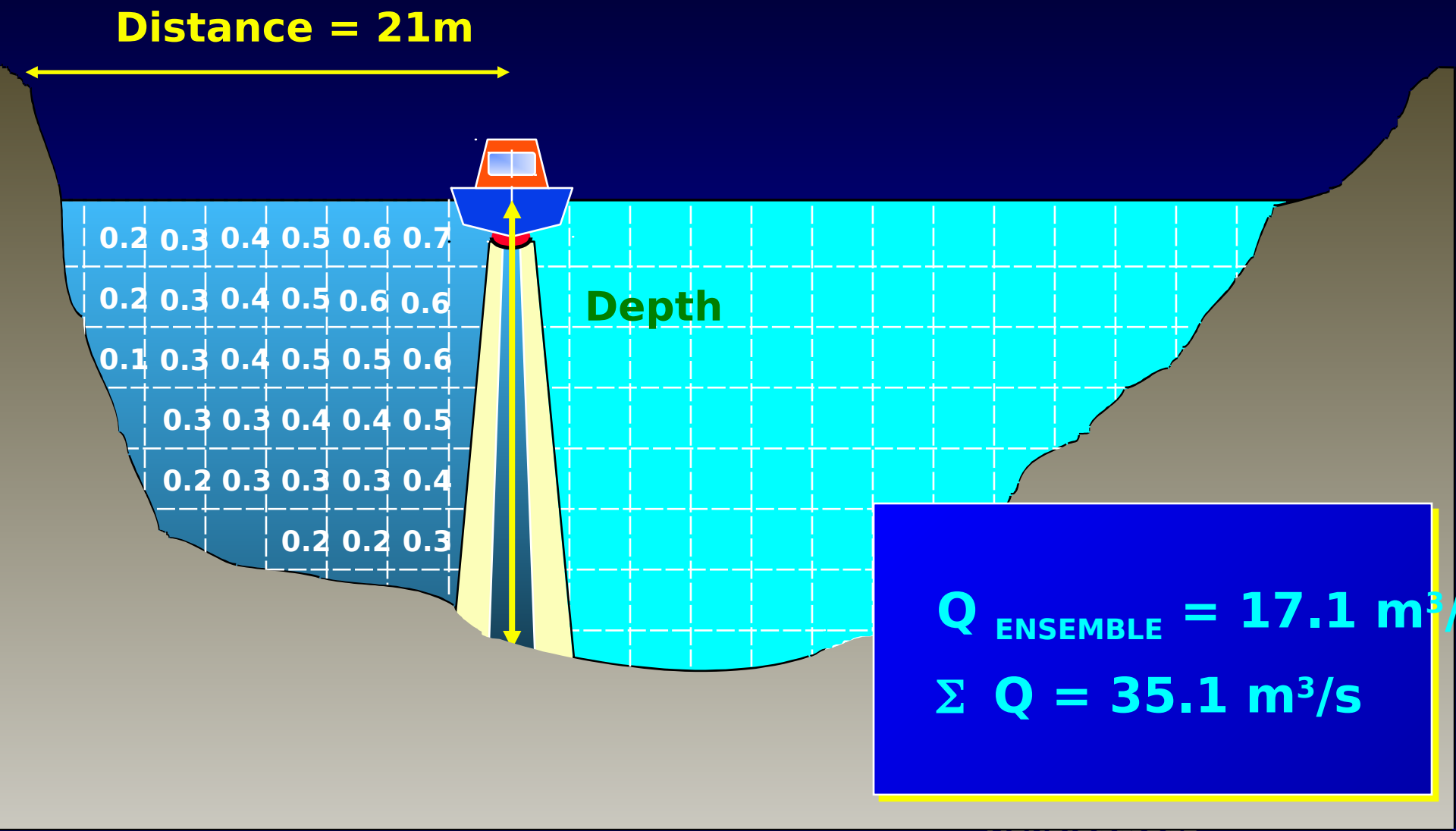

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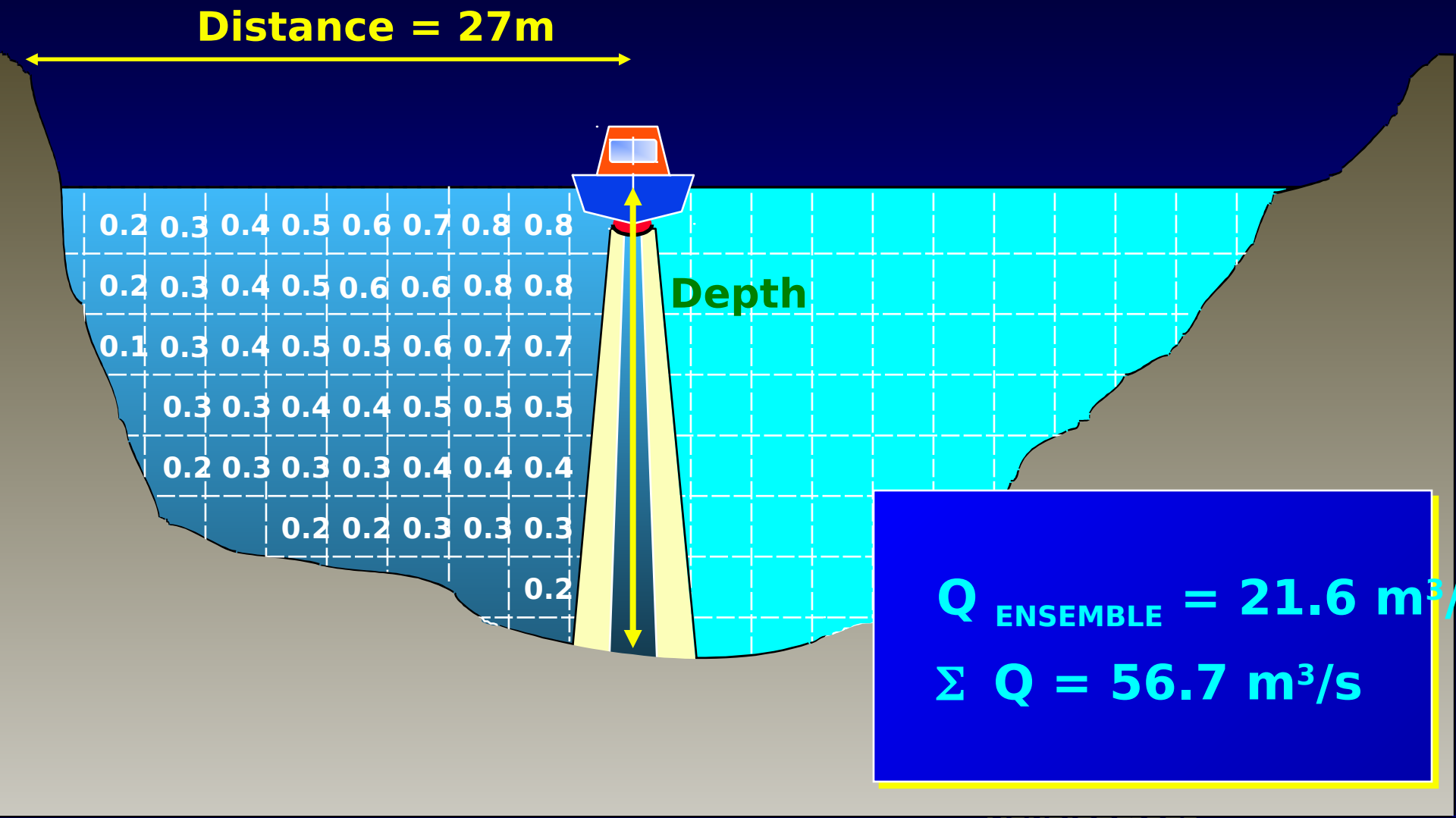


ADCP Survey John Day

John Day

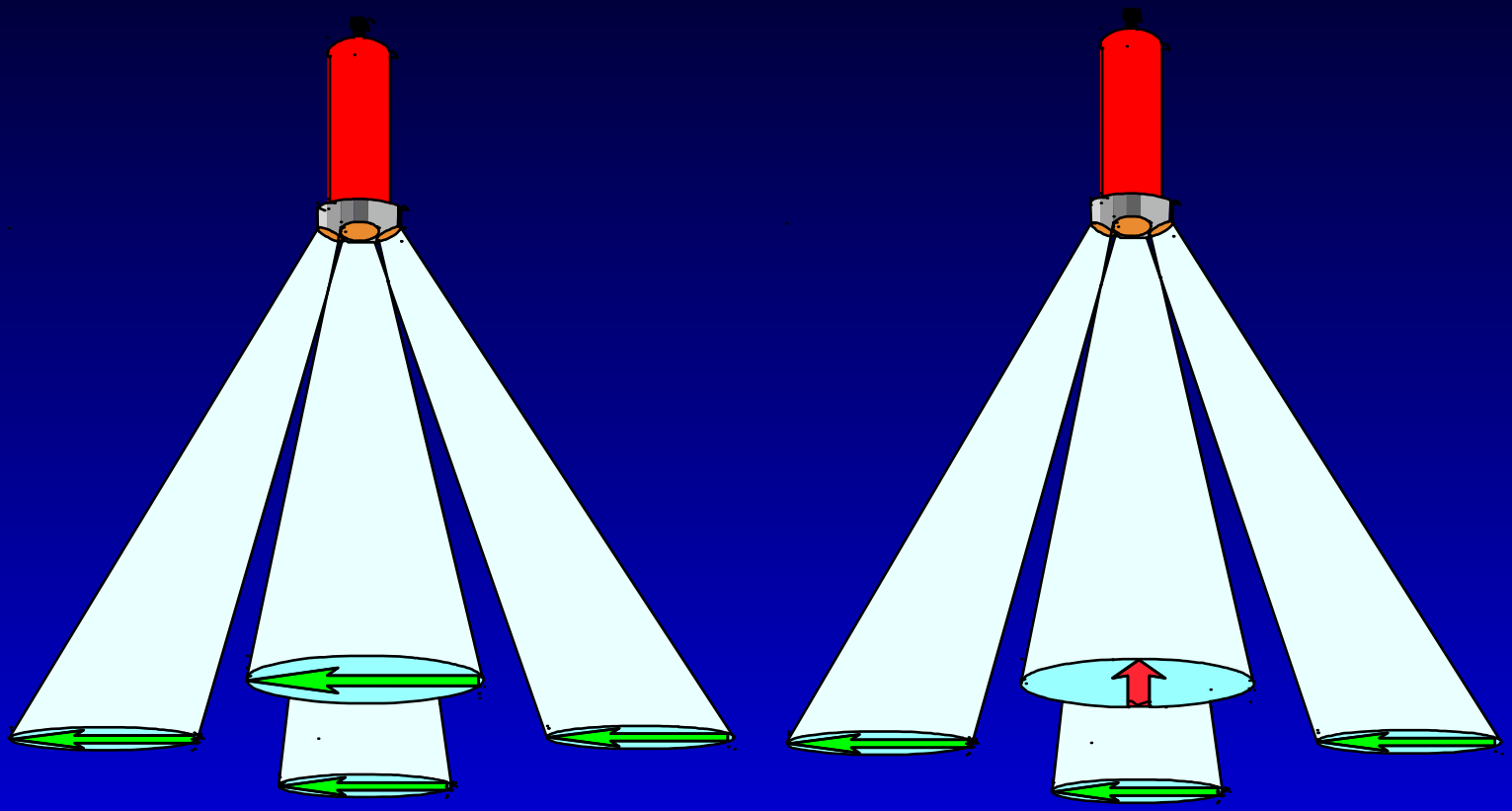
Columbia River

1228’ Spillway

20 Gates

Waves 3’ to 6’

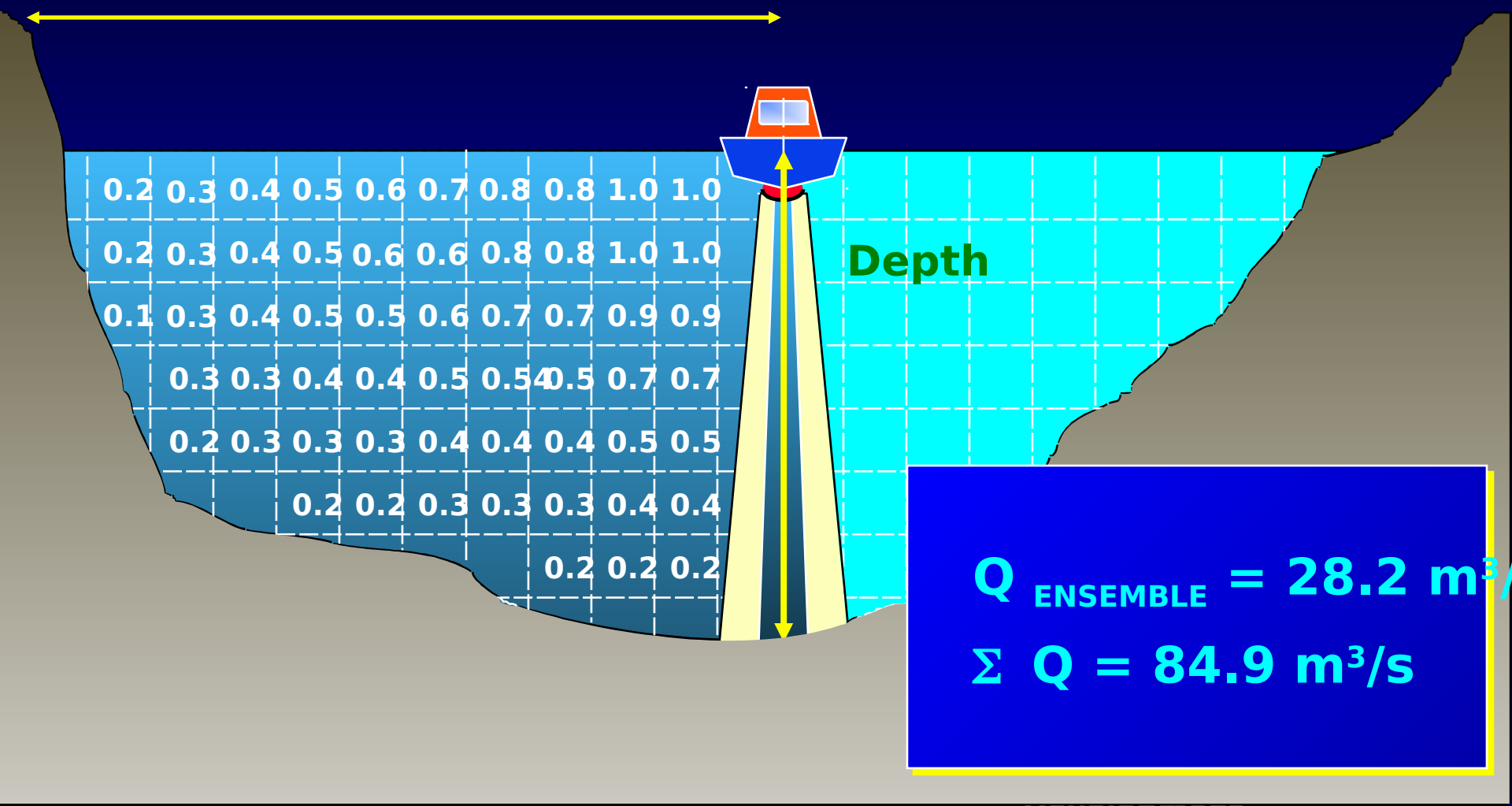
Flow Homogeneity



HOMOGENEOUS NONHOMOGENEOUS

ADCP Survey John Day

Discharge Measurement



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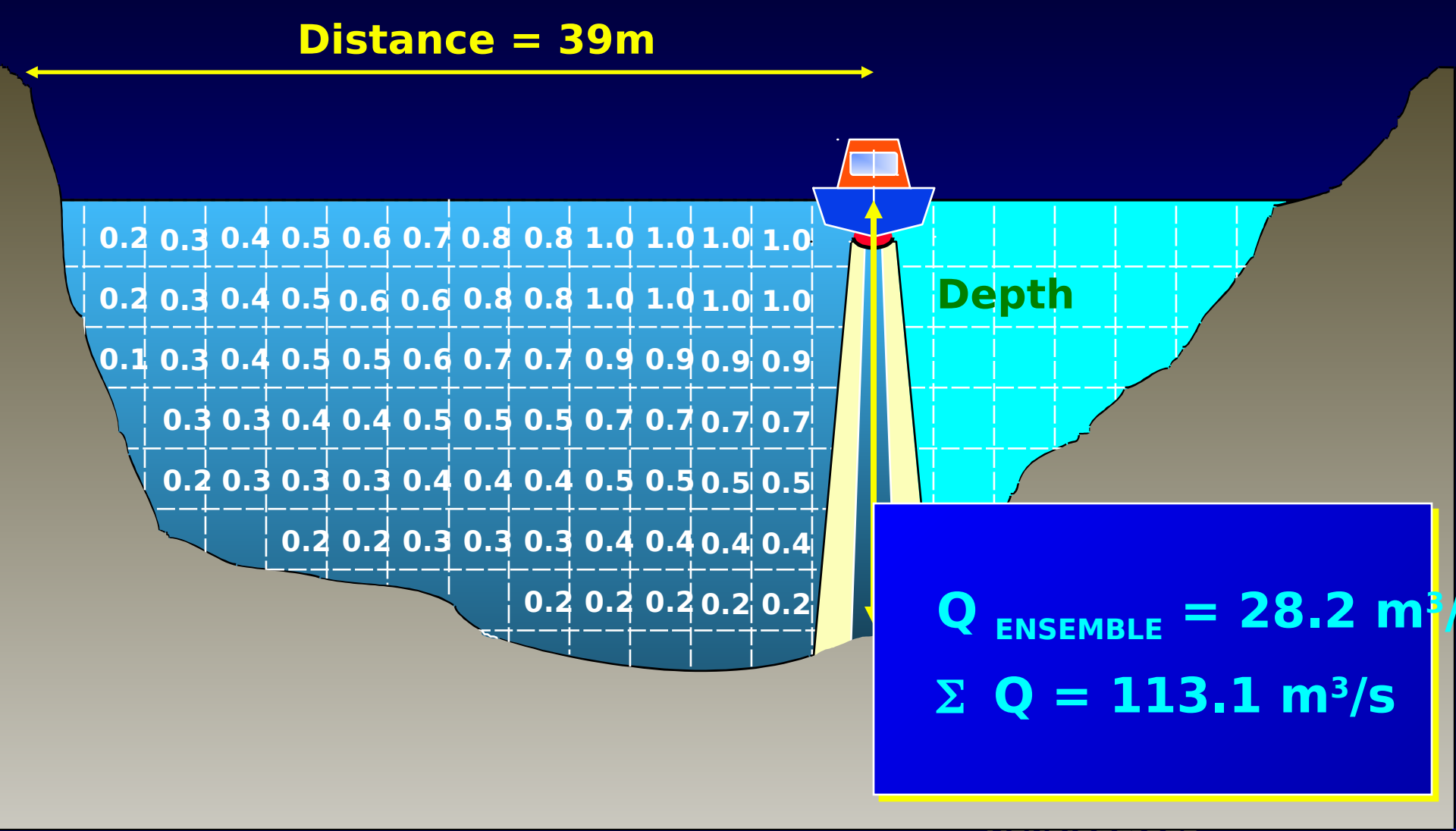

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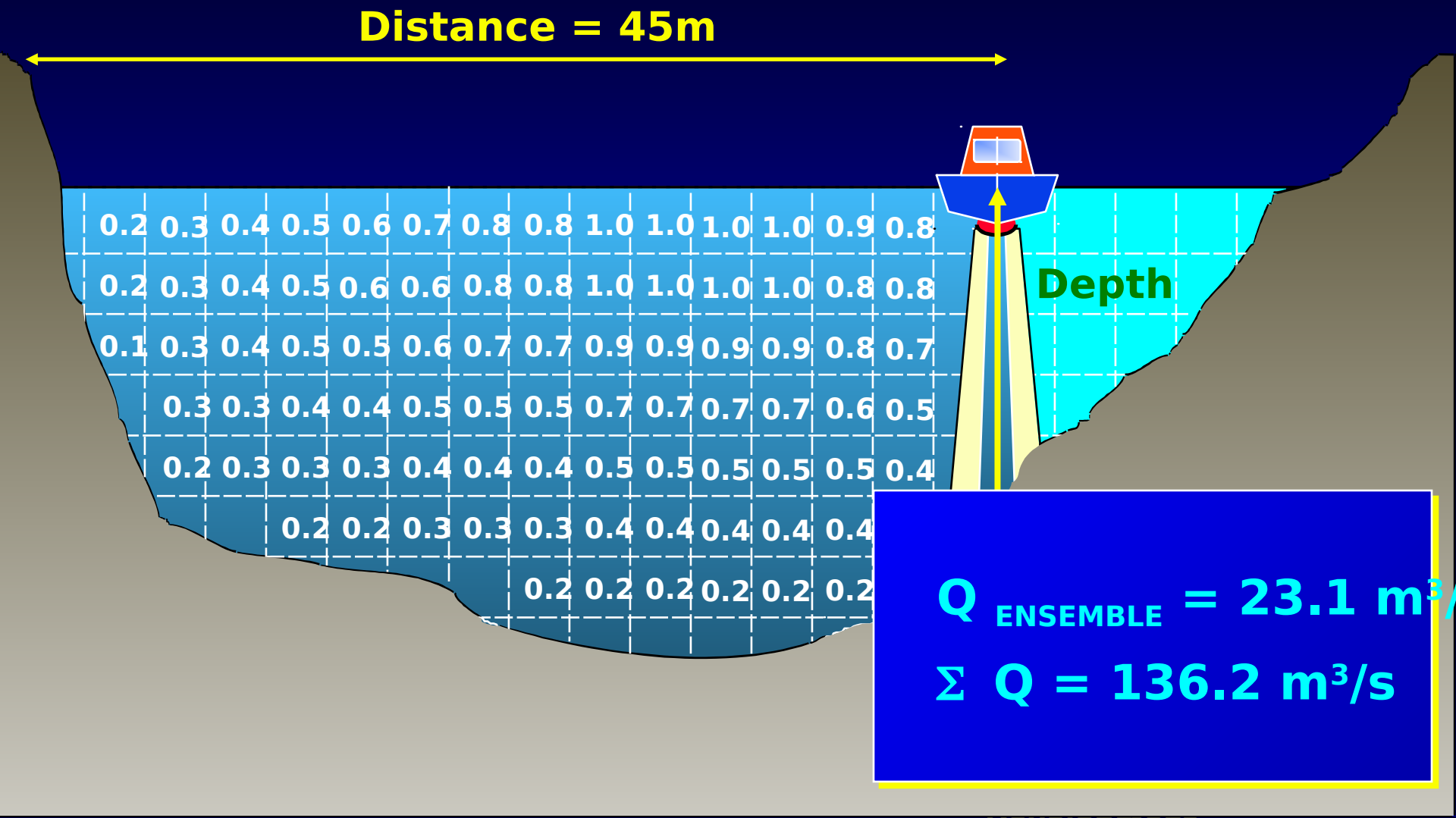

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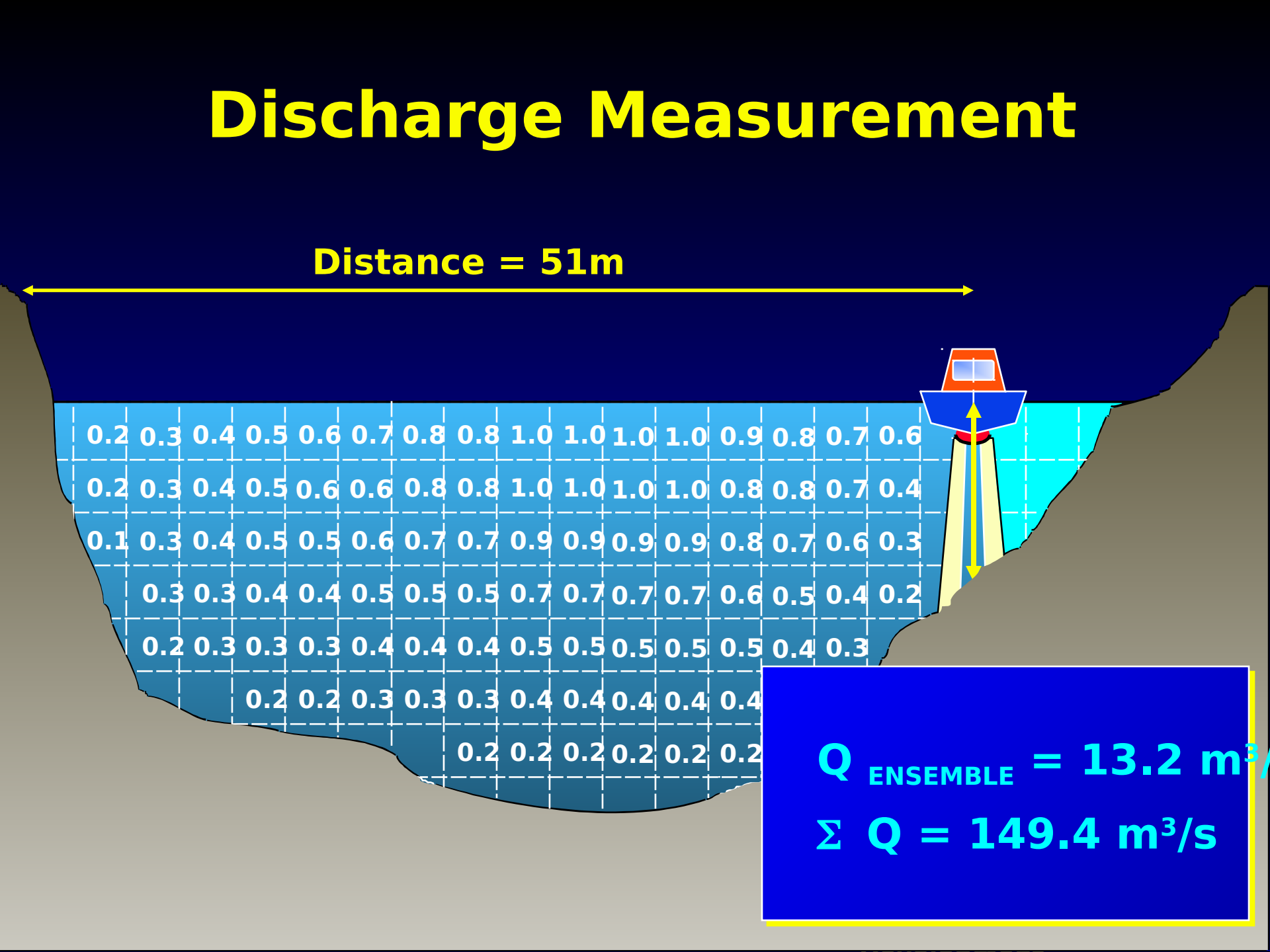

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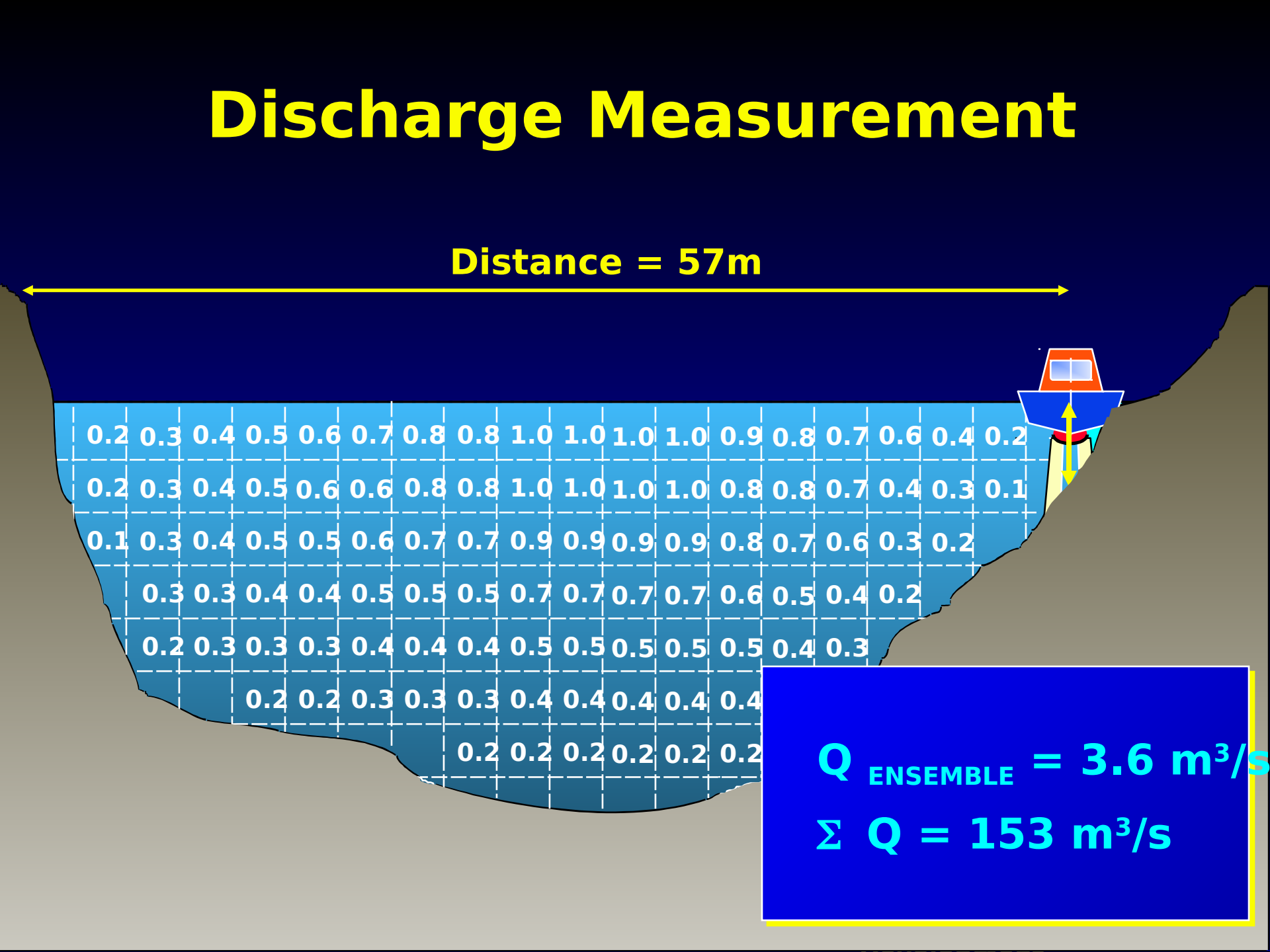

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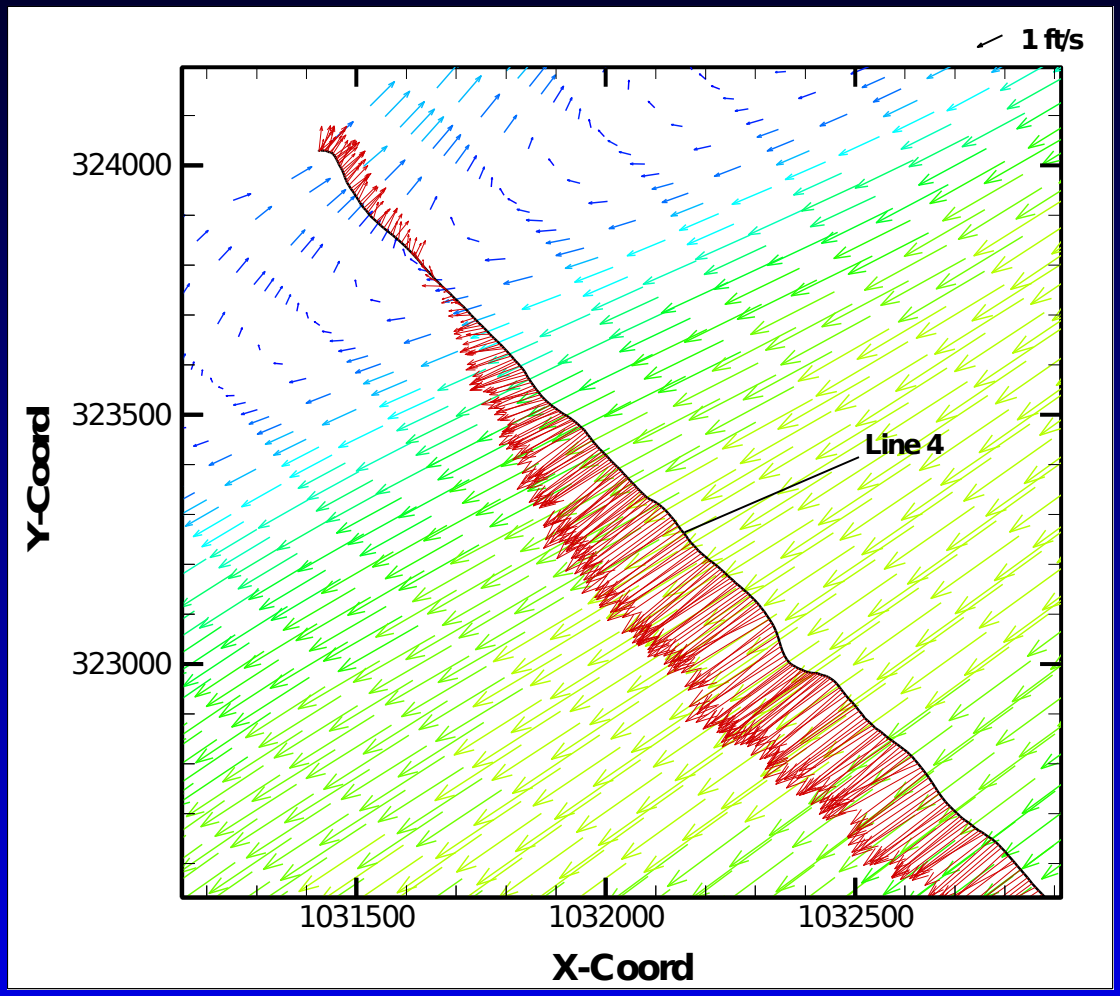

Questions?